Sea ice thickness measurements collected during the LOMROG 2007 and 2009 expeditions

Skourup, Henriette; Forsberg, René; Hanson, Susanne; Pedersen, Rasmus; Toudal Pedersen, Leif

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H. Skourup, R. Forsberg, S. Hanson, R. Pedersen, L. Toudal

According to scientific measurements, the Arctic sea ice extent has declined dramatically over the past thirty years, with the most extreme decline seen in the summer melt season. Other observations indicate that the sea ice has become thinner and perennial ice less widely distributed. The processes involved in the declining sea ice are not fully understood. This is primarily due to a lack of knowledge of the variety and high spatial resolution of, e.g. snow depth, ice thickness and morphology, which are difficult or impossible to obtain remotely.

During the LOMROG expeditions in 2007 and 2009 we have collected a unique data set of late summer sea ice thickness, freeboard height and snow depth from the high Arctic Ocean during the time of the annual minimum sea ice extent. The data were collected by on-the-ground drilling and EM measurements. Here we give a brief overview of the data collection, as well as the results including the freeboard-to-sea-ice thickness conversion factor, which is used when interpreting freeboard heights measured by remote sensing.